Title (en)

Yttrium oxide material, member for use in semiconductor manufacturing apparatus, and method for producing yttrium oxide material

Title (de)

Yttriumoxidmaterial, Element einer halbleiterproduzierenden Vorrichtung und Verfahren zur Herstellung des Yttriumoxidmaterials

Title (fr)

Matériau d'oxyde d'yttrium, élément d'un dispositif pour la fabrication de semi-conducteurs, et procédé pour la préparation d'un matériau d'oxyde d'yttrium

Publication

EP 2090557 A3 20120201 (EN)

Application

EP 09250397 A 20090213

Priority

JP 2008031244 A 20080213

Abstract (en)

[origin: EP2090557A2] A substrate of an electrostatic chuck, which is a member for use in a semiconductor manufacturing apparatus, is formed of an yttrium oxide based material that contains yttrium oxide (Y 2 O 3), silicon carbide (SiC), and a compound that contains a rare-earth element (RE), Si, O, and N. The yttrium oxide based material contains RE 8 Si 4 N 4 O 14 as a compound that contains a rare-earth element (RE), Si, O, and N, wherein RE may be La or Y. Y 8 Si 4 N 4 O 14 is produced during a sintering step of a raw material that contains the main component Y 2 O 3 and an accessory component Si 3 N 4 . Y 8 Si 4 M 4 O 14 and SiC in the yttrium oxide based material improve mechanical strength and volume resistivity.

IPC 8 full level

C04B 35/505 (2006.01); **C04B 35/626** (2006.01); **C04B 35/645** (2006.01); **H01L 21/683** (2006.01)

CPC (source: EP KR US)

C01B 32/956 (2017.07 - KR); **C01F 17/218** (2020.01 - KR); **C01F 17/30** (2020.01 - KR); **C04B 35/505** (2013.01 - EP KR US); **C04B 35/6261** (2013.01 - EP US); **C04B 35/64** (2013.01 - KR); **C04B 35/645** (2013.01 - EP US); **H01L 21/67** (2013.01 - KR); C01P 2004/60 (2013.01 - KR); C01P 2006/90 (2013.01 - KR); C04B 2235/3206 (2013.01 - EP US); C04B 2235/3208 (2013.01 - EP US); C04B 2235/3217 (2013.01 - EP US); C04B 2235/3224 (2013.01 - EP US); C04B 2235/3225 (2013.01 - EP KR US); C04B 2235/3227 (2013.01 - EP US); C04B 2235/3826 (2013.01 - EP KR US); C04B 2235/3873 (2013.01 - EP US); C04B 2235/445 (2013.01 - EP US); C04B 2235/5436 (2013.01 - EP KR US); C04B 2235/656 (2013.01 - EP KR US); C04B 2235/77 (2013.01 - EP US); C04B 2235/80 (2013.01 - EP KR US); C04B 2235/96 (2013.01 - EP KR US); H01L 21/6831 (2013.01 - EP US)

Citation (search report)

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Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

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DOCDB simple family (application)

EP 09250397 A 20090213; CN 200910007179 A 20090213; JP 2009026137 A 20090206; KR 20090011943 A 20090213; TW 98104656 A 20090213; US 36910609 A 20090211